

March 5, 2004

Bill Keeling
Virginia Department of Conservation and Recreation
203 Governor Street
Suite 206
Richmond, VA 23219

Dear Bill,

Thank you for your comments on the UT Hurricane Branch benthic TMDL draft report. In reading your comments I realize that some clarification is needed on several issues. Many of these issues were addressed at the final public meeting and we had very good discussions with the town officials and Fort Pickett personnel regarding implementation of this TMDL. Please see the enclosure for responses to your comments. Please feel free to contact me if you have additional questions.

Sincerely,

Kelly Wills
Regional TMDL Coordinator
Virginia Department of Environmental Quality

Enc

cc: Stu Wilson – VADCR (via email)
Charles Lunsford – VADCR (via email)
Charles Martin – VADEQ (via email)
Kyle Winter – VADEQ (via email)
Jutta Schneider – VADEQ (via email)
Raed EL-Farhan – Louis Berger Group (via email)
Michael Carroll - Louis Berger Group (via email)
Robert Oakes - Louis Berger Group (via email)

Subject: Response to comments on sediment TMDL for Unnamed Tributary of Hurricane Branch.

Date: April 5, 2004

Comment: Twitty's Creek does not seem an appropriate reference watershed/stream as Twitty's watershed is approximately 10 times the size of the impaired stream, has dissimilar land uses, and stream order are not comparable UT Hurricane Branch is a 1st order stream whereas Twitty's appears to be a 3rd order stream.

Response: *Selection of an appropriate reference watershed is based on similarities in watershed characteristics such as soils, topography, land uses, and ecology. Finding a reference stream that possesses all of the above listed similarities is often difficult because there must also be a history of bioassessment in the reference stream indicating non-impairment. It is also impossible to find a reference stream with the same landuse as UT Hurricane Branch due to the presence of a military base in the watershed. If the target stream had the same land-use as the reference stream, then there probably wouldn't have been an impairment to begin with.*

Twittys Creek was chosen as the reference watershed because of its non-impaired status and its relatively similar landuse. In section 6.5 and in Table 6-7 the watershed size adjustment made on Twittys Creek was discussed. "Since the Twittys Creek reference watershed is larger than the Hurricane Branch (UT) watershed, reference watershed parameters were adjusted to reflect the size of the impaired watershed. Sediment loadings computed for this area-adjusted watershed were used for TMDL allocations."

Comment: It appears DEQ's data would indicate the impaired reach should be listed as the entire length of the stream.

Response: *According to the Stream Condition Index (SCI) scores, the upstream reach of UT Hurricane Branch is impaired; however, SCI scores are not used to determine impairment in the 305(b) assessment process at this time.*

Comment: The single point source discharger is the second largest source of the pollutant of concern (sediment) yet has no reductions required. In fact the existing annual loading from the point source discharger is more than twice the combined loadings of Pasture/Hay and Low Intensity Residential land uses. Yet both of these sources have a 67% reduction required. TMDLs are supposed to be implemented with a combination of point and nonpoint source controls. Where are the point source controls?

Response: *Permitted facilities receive a waste load allocation (WLA) based on their permit limits for the pollutant of concern, which constitutes the point source control. The wastewater treatment plant (WWTP) discharges effluent that is already treated to reduced solids, therefore no additional reductions are required. All other sources have equal required percent reductions in sediment loading. In addition, this TMDL uses sediment as a surrogate parameter (see section*

4.6 and chapter 5). *The intention is to reduce the uncontrolled stormwater runoff to minimize its impact on the stream, not the sediment loading per se. Reducing the uncontrolled stormwater from the pervious surfaces in the town and the base will definitely have a direct and a positive impact on the stream conditions.*

Comment: There are no agricultural activities of any kind within the impaired watershed. Therefore, assuming loadings from pasture/hay land is incorrect. DEQ should consider using loadings from managed grassland acres, which would have significantly lower sediment loss annually than hay or pasture. Since there are no livestock in the watershed is it correct to base the stream bank erosion on an equation that requires a livestock density?

Response: *According the landuse/landcover data used in this study, eight percent (160 acres) of the watershed consisted of pasture/hay. There is no “managed grassland” category in the National Land Cover Data (NLCD) dataset, therefore the category could not be assessed. The NLCD is an EPA-approved dataset used in TMDL studies.*

The Evans equation used to calculate the instream erosion uses the livestock density among many other factors to estimate the “a parameter”. In cases where livestock density is low, the “a parameter” will be adjusted accordingly to reflect that.

Comment: The primary stressor is hydrologic modification or alteration yet a sediment TMDL has been developed? If the primary stressor in hydro modification resulting in erosive stream banks and deepening channel then why are most of the modeled loadings and reductions being placed on NPS sediment sources? This appears to be inconsistent with the stated primary stressor.

Response: *Sediment was selected as a surrogate parameter to represent the instream erosion and sedimentation problems caused by hydrologic alteration (see section 4.6 and chapter 5). The intention of this surrogate is to target uncontrolled runoff. We know that impervious surfaces aren’t contributing much sediment because there is nothing to erode, but the resulting stormwater runoff causes significant erosion to the stream channel. This is why in Table 7-4 there is an Instream Erosion category listed as a source of sediment that also has a 67 % required reduction. This will be addressed in the staged implementation process by Fort Pickett’s ongoing stormwater management program.*

Comment: Most of the identified hay and pasture other than being neither are isolated from the stream by considerable forested areas. In effect forested buffers already exist between the majority of these identified land uses.

Response: *Though the TMDL was calculated for sediment, the intent is to reduce stormwater runoff (see section 4.6 and chapter 5). The intention is to reduce the uncontrolled stormwater runoff first then target runoff from the smaller areas.*

Comment: Table 3-2 does not match with the same table in the previously issued stressor identification document specifically does SI mean severely or slightly impaired?

Response: *Table 3-2 in the TMDL draft report will be corrected to read Severely Impaired.*

Comment: What are the specific conductance numbers reflective of in the discharge from the identified point source? What is being discharged that causes such a dramatic increase in the monitoring data?

Response: *Treated wastewater contains many ions that would possibly increase the specific conductance of the receiving stream. In addition to the treated WWTP effluent, UT Hurricane Branch receives uncontrolled stormwater runoff from a tributary immediately above the recovery station; therefore it is not clear whether the increased specific conductance is due to the point source or the stormwater runoff. The increased specific conductance at the recovery station has not had an effect on the benthos as evidenced by negative toxicity results.*

Comment: 3-14 shows a pH discharge from the water treatment plant near 2.0 or very highly acidic. This and other similar discharges could adversely impact the benthos.

Response: *That instance of low pH was in 1999 and only occurred once; since the plant's substantial upgrade was completed in 2000, no violations have been observed. This instance of low pH would not affect the benthos long-term. In addition, according to the SCI scores UT Hurricane Branch is impaired upstream of the WWTP, which indicates the WWTP is not causing the impairment.*

Comment: Funding sources should not include NRCS-CREP funds as the allocation for the Southern Rivers portion of the Commonwealth has been met and is therefore no longer eligible in the impaired watershed. Additionally, since no farm receipts can be shown for the identified hay and pasture because there are no agricultural activities all USDA and state agricultural cost share funds would be ineligible. WQIA and section 319 funds are also likely ineligible for any NPDES permitted activities or on Department of Defense installations.

Response: *Section 8.4.3, Implementation Funding Sources, will be updated per your comments.*

MEMORANDUM

To: Kelly Wills, Regional TMDL Coordinator - VADEQ

From: William Keeling, NPS Modeling and Data Coordinator – VADCR

CC: Stu Wilson – VADCR, Charles Lunsford – VADCR, Charles Martin – VADEQ, Kyle Winter – VADEQ, to file

Date: May 12, 2004

Subject: Comments on sediment TMDL for Unnamed Tributary of Hurricane Branch

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